

HOSPITAL or CLINICAL APPOINTMENTS:

Fall 2001-Present Pro Bono clinical assistance at the Salvation Army Free clinic.
04/00-12/00 Progressive Therapy: 3138 Custer Drive, Suite 210; Lexington, KY
40517. Home Health Physical Therapist.
2002-2003 Cardinal Hill Rehabilitation Hospital. Lexington, KY.
2006-present Kenton Nursing Facility, Lexington, KY

TEACHING ACTIVITY:

University of Wisconsin-Milwaukee:

1988-1989 Graduate Teaching Assistantship in Human Anatomy and Physiology II.
Department of Biology.
1988-1989 Graduate Research Assistantship. Department of Biology.

The Ohio State University:

1990-1991 Graduate Research Associate. Department of Cell Biol. Neurobiology and
Anatomy. The Ohio State University.
1991-1994 Graduate Teaching Assistant for Medical Gross Anatomy and Neuroscience.
Department of Cell Biol. Neurobiology and Anatomy. The Ohio State University.

University of Kentucky:

1997 Teaching Assistantship in Gross Anatomy for Physical Therapy. Department of
Physical Therapy.
1997-1993 Tutor for Physical Therapy 802 (Neuroanatomy) course.
2000-2003 Tutor for Physical Therapy 802 (Neuroanatomy) course.
2000, and Coordinator/instructor for the Rehabilitation Sciences 770 (Professional seminar)
2004-Present course.
2000-Present Coordinator/instructor for the Physical Therapy 831 (Neurophysiology) course.
2001-Present Lecturer in Physical Therapy 847 (Medical and PT Management of Neurological
Problems) course.
2002-Present Co-coordinator/instructor for the RHB 710 (Neuroplasticity in Rehabilitation)
course.
2004-Present Lecturer in RHB 744 (Advanced Issues in Motor Development) course.
2004-Present Faculty Supervisor for RHB 788 (Independent Study in Rehabilitation Science)
course.

Courses Currently Teaching in the Physical Therapy Curriculum:

PT 831 (Neurophysiology)-Coordinator/instructor
PT 847 (Medical and PT Management of Neurological Problems)-Lecturer

Courses Currently Teaching in the Rehabilitation Sciences Doctoral Program
Curriculum:

RHB 710 (Neuroplasticity)-Coordinator/instructor
RHB 770 (Professional Seminar in Research) – Co-coordinator/instructor
RHB 744 (Advanced Issues in Motor Development)-Lecturer
RHB 788 Independent Studies in Rehabilitation Science

RHB 789 Research Apprenticeship in Rehabilitation Sciences

ADVISING ACTIVITY:

- 2001-2002 Advisor for undergraduate student in Biology 393 (independent research).
July 2001 Mentor for Young Women in Science Program.
2001-Present Clinical Instructor for Physical Therapy students at the Salvation Army Free clinic.
2001-Present Academic advisor for 6-7 Master's Level Physical Therapy Students each year.
- 2001-Present Master's research projects with students in the Division of Physical Therapy:
Feb 2003 Student Platform Presentation: Jonathan Averdick and Casey Kalb, American Physical Therapy Association Combined Sections Meetings. These students won the *2003 Entry Level Student Research Award from the Neurology Section of the American Physical Therapy Association* with research they conducted in my laboratory.
Feb 2004 Student Platform Presentation: Matt Day and Nicki Spafford, American Physical Therapy Association Combined Sections meetings.
- 2004-2005 Advisor for Undergraduate student ABT-301 (Writing and Presentations in the Life Sciences) course, which is the capstone course in Agriculture Biotechnology.
2004-Present Faculty supervisor for RHB 788 (Independent Study in Rehabilitation Sciences) for RHB Doctoral Students.

Master's Committees:

- 2000 Member, Graduate Thesis Committee for Chuck Hazel

Doctoral Committees:

- 2002-2004 Member, Ph.D. Graduate Committee for Ann Livengood. Kinesiology
2003-Present Ph.D. Graduate Committee for students in the RHB Doctoral Program
2007-Present DPT Research and Faculty advisor

ADMINISTRATIVE ACTIVITY AND UNIVERSITY SERVICE

University:

- 2002, 2004 Member, Committee to review incoming freshman academic scholarship applications.
2004-Present Grant Reviewer, UK Faculty Research Support Program.
2006-Present Member of Health Care Colleges Council

College:

- 2002-2003 Member, College of Allied Health Professions Academic Affairs Committee.
2002-2003 Member, College of Health Science CQI committee.
2003-2004 Member, Task Force to evaluate the research program of the College of Health Sciences.
2003-2006 Member, College of Health Science Faculty Council.
2004-2008 Member, Research Advisory Committee for the College of Health Science.

- 2005 Member, Search Committee for Associate Dean for Research for the College of Health Sciences.
- 2006-Present Member of the Department of Rehabilitation Sciences Faculty Review Committee.
- 2007-2008 Member of the College of Health Sciences 2 and 4 year Review Committee
- 2007-2008 Member of the College of Health Sciences Performance Review Appeals Committee

Division/Program:

- 2000 Member, Focus Group for the Physical Therapy Division: To evaluate the efficacy of comprehensive finals in preparing students for talking the Board Exams.
- 2002 Member, Focus Group for the development of the qualifying examination requirements for the Rehabilitation Sciences Doctoral program.
- 2002 Focus group for the development of research practicum requirements for the Rehabilitation Sciences Doctoral program.
- 2004-Present Member, Rehabilitation Sciences Doctoral Program Curriculum Committee.
- 2007-2008 Co-Chair of Faculty Search Committee for the Division of Physical Therapy

Other:

- 2001-present Pro Bono Physical Therapy Service at Salvation Army Free Clinic
- 2002, 2004 Manned Post-professional education booth at APTA National Meeting.

HONORS:

- 1993 Award for Presentation at the 9th Annual Bennett Graduate Research Day, The Ohio State University.
- 1994 Award for Presentation at the 10th Annual Bennett Graduate Research Day, The Ohio State University.
- 1999 Outstanding Student Award. Division of Physical Therapy, College of Allied Health Professions. University of Kentucky.
- 2003-Present Member, Alpha Eta Society.

PROFESSIONAL ACTIVITY AND PUBLIC SERVICE:

Memberships in Professional Societies:

- 1992-Present The Society for Neuroscience
- 1994-Present The Kentucky Chapter of the Society for Neuroscience
- 1997-Present The American Physical Therapy Association (APTA).
- 1997-Present The Kentucky Chapter of the APTA
- 2001-Present The National Neurotrauma Society

Journal Reviewer:

- 1998 Journal Reviewer, *Archives of Dermatological Research*.
- 2002-Present Journal Reviewer, *Physical Therapy*. (This is the Journal of the American Physical Therapy Association).
- 2004-Present Journal Reviewer, *Archives of Physical Medicine and Rehabilitation*.

2005-Present Journal Reviewer, *Journal of Neurologic Physical Therapy*

2005-Present Journal Reviewer, *Neuroscience*

2006-Present Journal Reviewer, *Brain*

2007-present Journal Reviewer, *Journal of Sport Rehabilitation*

RESEARCH PRODUCTIVITY:

Peer-Reviewed Publications (Students name is underlines):

1. **Kitzman, P.H.**, Uhl TL., Dwyer MK. Gabapentin Suppresses Spasticity in the Spinal Cord Injured Rat. *Neuroscience* 149: 813-821 (2007)
2. **Kitzman P.** VGLUT1 and GLYT2 labeling of Sacrocaudal Motoneurons in the Spinal Cord Injured Spastic Rat. *Exp. Neurology*. 204: 195-204 (2007).
3. **Kitzman P.** Changes in Vesicular Glutamate Transporter 2, Vesicular GABA transporter and Vesicular Acetylcholine Transporter Labeling of Sacrocaudal Motoneurons in the Spastic Rat. *Exp. Neurology*. 197: 407-418 (2006).
4. Shaffer S.W. and **Kitzman P.H.** Neuronal plasticity following peripheral nerve dysfunction and the role of sensory reeducation: A literature review. (In revision)
5. **Kitzman P.** Alterations in Axial Motoneuronal Morphology in the Spinal Cord Injury Induced Spastic Rat. *Exp. Neurology*. 192:100-108 (2005).
6. Krimm RF, Miller KK, **Kitzman PH**, Davis BM, Albers KM. Epithelial Overexpression of BDNF and NT4 Disrupts Targeting of Taste Neurons That Innervate the Anterior Tongue. *Dev. Biol.* 232:508-21 (2001).
7. **Kitzman, P.H.**, Perrone, T.N., LeMaster, A.M., Davis, B.M., and Albers, K.A. Level of p75 Receptor Expression in Sensory Ganglia is Dependent on Neurotrophin Level in Target Tissue. *J. Neurobiol.* 35 (3): 258-270 (1998).
8. Albers, K.M., P.H. **Kitzman**, A.M. LeMaster, and B.M. Davis. Effects of Neurotrophin Growth Factor Overexpression in Epidermis of Transgenic Mice on the Neuronal Innervation and Structure of Skin. *J. Invest. Dermatol.* 108:551 (1997)
9. **Kitzman, P.H.** and Bishop, G.A. The Physiological Effects of Serotonin on Spontaneous and Amino Acid-induced Activation of Cerebellar Nuclear Cells: an in vivo study in the cat. *Progress in Brain Research.* 114:209-223 (1997)
10. **Kitzman, P.H.** and Bishop, G.A. The Origin of Serotonergic Afferents to the Cat's Cerebellar Nuclei. *J. Comp. Neurol.* 340:541-550 (1994).
11. **Kitzman, P.H.** and Hutz, R.J. In-vitro Effects of Angiotensin II on Steroid Production by Hamster Ovarian Follicles and on Ultrastructure of the Theca Interna. *Cell and Tissue Res.* 268:191-196 (1992).
12. **Kitzman, P.H.** and Hutz, R.J. Oestradiol Exerts Disparate Effects on Ultrastructure and Steroidogenesis of Ovarian Theca from Preovulatory Hamster Follicles. *Zoological Science.* 8:767-774 (1991).
13. Hutz,R.J., Schaller,M., **Kitzman, P.H.**, Bejvan, S.M. Oestradiol-17 β Affects Differentially Viability, Progesterone Secretion, and Apical Surface Morphology of Hamster Ovarian Follicles in-vitro. *Zoological Science.* 8:81-88 (1991).

Book Chapters:

1. Malone, T.R., Nitz, A.J., Queen, S.A., **Kitzman**, P.H., Nyland, J., and Brosky, T. Proprioception and Neuromuscular Control of the Lower Extremity. In: *Current Concepts in the Rehabilitation of the Knee*. Wilk, K. ed. (2004).
2. Nitz, A.J. and **Kitzman**, P.H. Bone Injury and Repair. In: *Orthopaedic Physical Therapy Secrets*. Placek, J. and Boyce, D.A. eds. (2001).
3. Springer, J.E. and **Kitzman**, P.H. Neuroprotective Strategies Involving the Neurotrophins and their Signaling Pathways. In: *Neuroprotective Signal Transduction*. Chapter 1, pp. 1-21. Mattson, M. ed. Humana Press (1997).

Abstracts (Students names are underlined):

1. **Kitzman P.**, Uhl T. Efficacy of riluzole managing spinal cord injury induced spasticity in the rat. *American Physical Therapy Association Combined Sections Meetings, Nashville (2008, accepted)*. Refereed
2. **Kitzman P.**, Uhl T., Dwyer M. Gabapentin suppresses spinal cord injury induced spasticity in the rat. *American Physical Therapy Association Combined Sections Meetings, Boston (2007)* Refereed
3. **Kitzman P.** Changes in glutamatergic and glycinergic inputs to sacrocaudal motoneurons in the spinal cord injured spastic rat. *Society for Neuroscience Meetings. Atlanta, GA (2006)*.
4. **Kitzman P.**, Uhl T., and Dwyer M. Suppression of the glutamatergic system for the management of spasticity in the rat: A preliminary study. *12th Annual Kentucky Spinal Cord and Brain Injury Research Symposium. Lexington, KY (2006)*
5. **Kitzman P.** Changes in excitatory and inhibitory synapses on sacrocaudal motoneurons in the SCI-induced spastic rat. *American Physical Therapy Association Combined Sections meetings. New Orleans, LA (2005)*
6. **Kitzman PH.** Alteration of Synaptic Influences on Motoneurons in the Spastic Rat. *The American Paraplegia Society. Las Vegas, NV (2004)*
7. **Kitzman P.** Alterations in Axial Motor Neuron Morphology in the Spastic Rat. *American Physical Therapy Association Combined Sections meetings. Nashville, TN (2004)*
8. Day JM, Spafford NL, **Kitzman PH**, Queen SA. The Effect of Position on Muscle Tone in Post Stroke Patients. *American Physical Therapy Association Combined Sections meetings. Nashville, TN (2004)*
9. **Kitzman P.**, Averdick J., Kalb C. Changes in Renshaw Cell Morphology in the Spinal Cord Injury Induced Spastic Rat. *National Neurotrauma Society. Biloxi, MS (2003)*
10. Averdick J, Kalb C., and **Kitzman PH**. Spinal Cord Injury Induced Changes in Renshaw Cell Morphology in the Spastic Rat. *American Physical Therapy Association Combined Sections meetings. Tampa, FL (2003)*
11. Rangappa N, de Silva U., Ngo TB, Barnes GN, **Kitzman P**, and Smith GM. Cell Adhesion Molecule Alters Axonal Growth from DRG in vitro and in Adult Rat Brain. *Society for Neuroscience*. (2002)
12. Patrick **Kitzman** and Joey Bargo. Alteration in Spinal Motor Neuronal Morphology in the Spastic Rat. *Kentucky Spinal Cord and Brain Injury Rehabilitation Symposium*. (2001)

13. **Kitzman**, P.H., Davis, B.M., LeMaster, A.M., and Albers, K.M. The Effects of Overexpression of NT-3 in the Skin on Sensory Innervation of the Central Nervous System. *Society for Neuroscience (1996)*
14. **Kitzman**, P.H., Albers, K.M., and Davis, B.M. Expression of p75 in the Trigeminal Ganglion of Transgenic Mice that Overexpress NGF in the Skin. *Society for Neuroscience (1995)*
15. **Kitzman**, P.H. and Bishop, G.A. The Physiological Effects of Serotonin on Neurons in the Cat's Cerebellar Nuclei. *Society for Neuroscience (1993)*
16. **Kitzman**, P.H. and Bishop, G.A. The Origin of Serotonergic Projections to the Cerebellar Nuclei of the Cat. *Society for Neuroscience (1992)*
17. **Kitzman**, P.H., O'Shaughnessy, I.M., and Hutz, R.J. Effects of Estradiol-17 β on Ultrastructure of and Androstenedione Secretion by Ovarian Theca from Hamsters. *The Endocrine Society (1990)*
18. **Kitzman**, P.H. Angiotensin II Alters Ultrastructure of and Steroid Secretion by Cultured Ovarian Follicles from Hamsters. *Soc. for the Study of Reprod. (1990)*
19. Hutz, R.J., Quandt, L., **Kitzman**, P.H., Zachow, R.J., and Fischer, C.L. Role of Estrogen on Ovarian Follicle Function In-Vitro and In-Vivo, Prior to IVF. *Proc. Int. Primatol. Soc., Kyoto and Nagyoa, Japan 1990.*
20. Hutz, R.J., Bejvan, S.M., Fischer, C.L., Zachow, R.J., Quandt, L., and **Kitzman**, P.H. Disparate Effects of Estrogens on In-Vitro Steroidogenesis by Ovarian Granulosa cells from Four Orders of Mammals, including Primates. *Proc. American Soc. of Primatology. Mobile, Al. 1989.*

Platform Presentations:

1. **Kitzman P.** Alterations in Axial Motor Neuron Morphology in the Spastic Rat. (2004) *American Physical Therapy Association Combined Sections meetings.*
2. Averdick J, Kalb C., and **Kitzman PH.** (2003) Spinal Cord Injury Induced Changes in Renshaw Cell Morphology in the Spastic Rat. *American Physical Therapy Association Combined Sections meetings.*

Invited Speaker:

1. **Kitzman P.,** Uhl T., Dwyer M. Gabapentin suppresses spinal cord injury induced spasticity in the rat. Thematic Poster Session at the American Physical Therapy Association Combined Sections Meetings, Boston (2007)
2. **Kitzman, P.** Skills Enhancement Training II: Spinal Cord Injury. Kentucky Office of Vocational Rehabilitation, Frankfort, KY (2005)
3. **Kitzman, P.** Theoretical Basis of Motor Control. American Physical Therapy Association Meeting, Washington, DC (2005)
4. **Kitzman, P.** Changes in excitatory and inhibitory synapses on sacrocaudal motoneurons in the SCI-induced spastic rat. Thematic Poster Session at the American Physical Therapy Association Combined Sections meetings. New Orleans, LA.(2005)

Grant Activity:

Chronic Inhibition of Glutamate Release and Spasticity Suppression. Paralyzed Veteran of America (2007). Role: PI. Funding: Approved, unfunded

Role of Glutamatergic System in SCI-induced Spasticity in Axial Musculature. Kentucky Spinal Cord and Head Injury Research Trust. Role: PI. Funding Period: 1/15/05-1/14/08. **Award Amount: \$283,329.**

Suppression of SCI-induced Spasticity by Inhibition of Glutamate Release. Paralyzed Veterans of America. (2005) Role: PI. **2 year grant was approved for funding (\$136,572).**

Alterations in Renshaw Cell Inputs in the Spinal Cord Injury Induced Spastic Rat. The University of Kentucky Executive Vice President for Research: Research Support Grant. Role: PI. Funding period: 2/1/04-1/31/05. **Award Amount: \$15,847.**

Health Professions Faculty Curriculum Development Grant. The Midwest Health Professions Service Learning Consortium. Role: PI. Funding period: 1/22/03-1/22/04. **Award Amount: \$2000.**

Spinal Cord Injury Induced Synaptic Reorganization: A Basis for Spasticity and Hyperreflexia. The American Paraplegia Society. Role: PI. Funding Period: 11/01/02-10/31/03. **Award Amount: \$10,300.**

Anatomical Basis of Spinal Cord Injury Induced Spasticity. The University of Kentucky Medical Center Research Fund. Role: PI. Funding Period: 07/01/00-06/31/01. **Award Amount: \$12,660.**

NIH National Research Service Award. 2-year Postdoctoral Fellowship (1995-1997). Role: PI. NIH Training Grant: Neuronal Development, Plasticity, and Regeneration. 1-year Pre-doctoral Fellowship (1993-1994).

The Ohio State University Graduate Student Alumni Research Award (1994) Role: PI.

Sigma Xi Grant-In-Aid of Research (1989).

Endocrine Society Summer Student Fellowship (1989).

Project Assistant NSF Young Scholars Summer Program (1989).

Current Research Directions:

1. Ongoing studies are aimed at the examination of anatomical changes within the spinal cord circuitry that occur following spinal trauma. These experiments are crucial for determining how spinal trauma alters the spinal circuitry below the level of the injury and how these changes lead to the development of spasticity and hyperreflexia. This information is crucial for the development of novel therapeutic and pharmacological treatments for individuals with spinal cord injury-induced spasticity and hyperreflexia. In addition, this information is crucial for the development of treatments to preserve the spinal circuitry in as "normal" a condition as possible. Thus allowing for the possible successful reconnection with the spinal cord located above the injury site. Started 2000.

2. Ongoing studies aimed at examining the effects of physical therapy interventions on muscular tone in patients following stroke. These experiments are aimed at developing a more quantifiable measurement of muscular tone to better facilitate the development and evaluation of therapeutic interventions for reducing tone in the post-stroke individual. Started in 2003.
3. Pharmacological intervention in spinal cord injury induced spasticity. Current treatments for spasticity are not effective for all individuals suffering from spinal cord injury induced spasticity and hyperreflexia. Thus, these preliminary studies are aimed at evaluating two novel pharmacologic agents for the treatment of spasticity of spinal origin. In addition, the lab has established a nice animal model for evaluation of additional pharmacological interventions in the treatment of spasticity. Started 2005.
4. Clinical Studies 2007—I have begun a series of clinical studies (several) in partnership with Cardinal Hill rehabilitation Hospital where we are first conducting the reliability, validity, and responsiveness assessment of two new tools for assessing the effect of spasticity in the individual post SCI. Based on the results of these studies a series of clinical trials looking at drug efficacy may be initiated. Also a series of studies looking at the efficacy of several Physical therapy techniques in the management of spasticity in the SCI population is underway.